

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

I. Amendments to the Claims

By this Amendment, claims 6 and 16 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

Further, independent claims 1 and 12 have been amended to clarify features of the invention recited therein and to further distinguish the present invention from the references relied upon in the rejections discussed below.

Moreover, dependent claims 5 and 15 have been amended to remain consistent with amended independent claims 1 and 12.

II. 35 U.S.C. § 102 and §103 Rejections

Claims 1-5, 7, 8 and 12-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Dowdell. Further, claims 6, 9, 10 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dowdell in view of various combinations of Narayanaswami and Andrews. These rejections are believed clearly inapplicable to amended independent claims 1 and 12 and the claims that depend therefrom for the following reasons.

Amended independent claim 1 recites a three-dimensional shape drawing device including a depth value calculation section for calculating a depth value of a pixel to be drawn, a high order Z-buffer memory for retaining high order bits of a depth value of a pixel to be displayed as a front face, and a low order Z-buffer memory for retaining low order bits of the

depth value of the pixel to be displayed as the front face, such that a number of the low order bits is equal to or larger than a number of the high order bits retained in the high order Z-buffer memory. In addition, claim 1 recites that the three-dimensional shape drawing device includes a high order Z-buffer clearing section for initializing the depth value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory with a predetermined value, wherein the predetermined value indicates one of a shallowest depth value and a deepest depth value.

Initially, the Applicant notes that the above-mentioned 35 U.S.C. § 103(a) rejection relies on col. 4, lines 27-31 of Dowdell for disclosing the “high order Z-buffer clearing section for initializing the depth value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory with a predetermined value,” as now recited in claim 1 (see page 12 of Office Action dated January 27, 2010).

However, col. 4, lines 27-31 of Dowdell merely teach that a new Z-value is compared to a constant value in order to determine whether the new Z-value or the constant value is written to a memory.

Thus, in view of the above, it is clear that Dowdell teaches comparing the new Z-value to a constant value, but fails to disclose or suggest the high order Z-buffer clearing section that initializes the depth value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory with a predetermined value, as recited in claim 1.

The Applicant notes that page 12 of the Office Action states that “new z-value is compared to a constant value, thus the depth value must have been initialized to said constant value.” However, it is respectfully submitted that even though Dowdell teaches that the new Z-value is compared to a constant value, there is no indication that Dowdell teaches that the depth

value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory is initialized to a predetermined value, as recited in claim 1. In other words, despite the fact that Dowdell teaches that the new Z-value is compared to another value, Dowdell still does not disclose that the new Z-value is initialized to a predetermined value and Dowdell still does not disclose or suggest that the depth value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory is initialized to a predetermined value, as recited in claim 1.

Next, the Applicant notes that the above-mentioned 35 U.S.C. § 103(a) rejection acknowledges that Dowdell fails to disclose or suggest that “the predetermined value indicates a shallowest depth value or a deepest depth value,” and relies on col. 11, lines 13-18 of Andrews for disclosing the features related to the shallowest depth value and the deepest depth value, as now recited in claim 1 (see page 12 of Office Action dated January 27, 2010).

However, col. 11, lines 13-18 of Andrews merely teach that that the Z-buffer is initialized to its smallest value (i.e., the hither value).

Thus, in view of the above, although Andrews teaches initializing the Z-buffer to its smallest (hither) value, Andrews still fails to disclose or suggest that the depth value of the pixel to be displayed as the front face and retained by the high order Z-buffer memory is initialized to the predetermined value indicating one of a shallowest depth value and a deepest depth value, as required by claim 1.

Therefore, because of the above-mentioned distinctions it is believed clear that claim 1 and claims 4, 5 and 7-10 that depend therefrom would not have been obvious in view of the combination of Dowdell and Andrews.

Furthermore, there is no disclosure or suggestion in Dowdell and/or Andrews or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Dowdell and/or Andrews to obtain the invention of independent claim 1. Accordingly, it is respectfully submitted that independent claim 1 and claims 4, 5 and 7-10 that depend therefrom are clearly allowable over the prior art of record.

Regarding dependent claims 9 and 10, which were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dowdell in view of Narayanaswami (secondary reference), it is respectfully submitted that this secondary reference does not disclose or suggest the above-discussed features of independent claim 1, which are lacking from the Dowdell and Andrews references. Therefore, no obvious combination of Dowdell and Andrews with the secondary reference would result in, or otherwise render obvious, the invention recited independent claim 1 and the claims that depend therefrom.

Amended independent claim 12 is directed to a method and recites features that correspond to the above-mentioned distinguishing features of independent claim 1. Thus, for the same reasons discussed above, it is respectfully submitted that independent claim 12 and claims 13-15 that depend therefrom are allowable over the prior art of record.

III. Conclusion

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance and an early notification thereof is earnestly requested. The Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

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